IN THE SPECIFICATION:

Pursuant to 37 C.F.R. §§ 1.121 and 1.125 (as amended to date) please enter the replacement paragraphs shown in clean form below. Marked-up replacement paragraphs to clearly identify amendments to the specification as required by 37 C.F.R. § 1.121(b)(3)(iii) is attached hereto. It is respectfully submitted that the substitute specification does not introduce new matter into the above-referenced patent application.

Please replace the paragraph bridging pages 4 and 5 with the following:

Pulse oximetry measurements typically use a digit, such as a finger, or an ear lobe or other element of the body, where blood flows close to the skin as the medium through which light energy is transmitted. The finger, for example, is composed of various tissues and substances including skin, fat, bone, muscle, blood, etc. The extent to which each of these biological tissues and substances attenuate incident electromagnetic energy is generally known. However, the effect of motion can cause changes in the optical coupling of the sensor (or probe) to the finger, the underlying physiology, the local vasculature, optical properties of tissues due to changing optical path length as well as combinations and interactions of all of the above. Thus, patient motion may cause erratic energy attenuation.

Please replace the first full paragraph on page 7 with the following:

Various approaches to removing motion artifacts from measured physiological signals, and particularly for use in pulse oximeters, have been proposed. U.S. Patent Nos. 5,482,036, 5,490,505, 5,632,272, 5,685,299, 5,769,785 and 6,036,642, all to Diab et al., and U.S. Patent No. 5,919,134 to Diab, disclose methods and apparatuses for removing motion artifacts using adaptive noise cancellation techniques. The basic proposition behind these Diab et al. patents is to first generate a noise reference signal from the two measured signals, and then use the noise reference signal as an input to an adaptive noise canceller along with either or both of the measured signals to remove the reference noise signal from the measured signals, thus approximating the actual parametric signals of interest. These Diab et al. patents appear to require the use of both measured input signals to generate a noise reference signal. Where the

adaptive noise cancellation involves the use of a correlation canceller as disclosed in U.S. Patent No. 5,482,036, additional problems include significant computational overhead and under certain circumstances, the correlation canceller will drive the output signal to zero.

C2

Please replace the third full paragraph on page 11 with the following:

C3

FIG. 2 is two graphs showing acquired IR and red data segments.